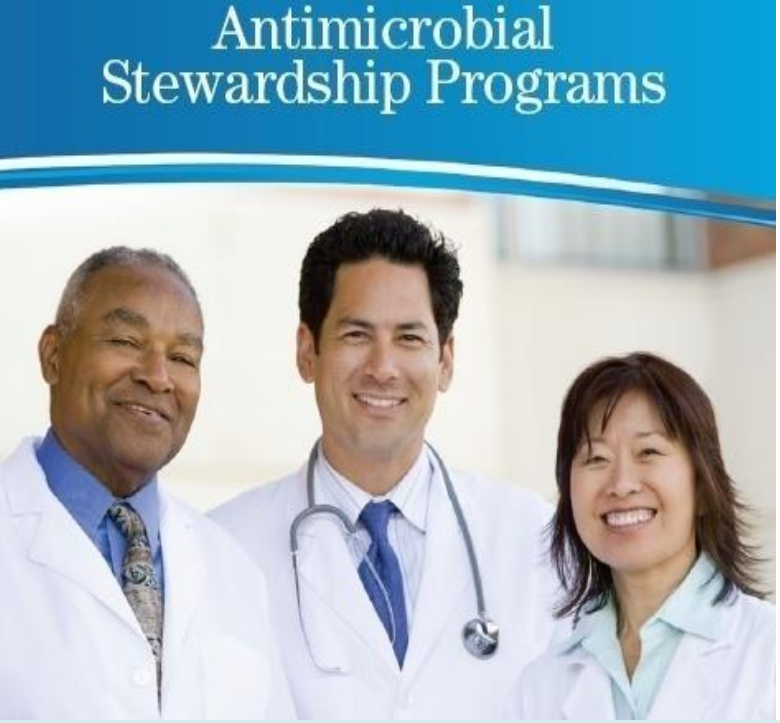


Antimicrobial Stewardship:

Arizona Partnerships Working to Improve the Use of Antimicrobials in the Hospital and Community

Part 11

"Antibacterials – indeed, anti-infectives as a whole – are unique in that misuse of these agents can have a negative effect on society at large. Misuse of antibacterials has led to the development of bacterial resistance, whereas misuse of a cardiovascular drug harms only the one patient, not causing a societal consequence."

- Glenn Tillotson; Clin Infect Dis. 2010;51:752

"…we hold closely the principles that antibiotics are a gift to us from prior generations and that we have a moral obligation to ensure that this global treasure is available for our children and future generations."

- David Gilbert, et al (and the Infectious Diseases Society of America). Clin Infect Dis. 2010;51:754-5

A Note To Our Readers and Slide Presenters

The objectives of the Subcommittee on Antimicrobial Stewardship Programs are directed at education, presentation, and identification of resources for clinicians to create toolkits of strategies that will assist clinicians with understanding, implementing, measuring, and maintaining antimicrobial stewardship programs.

The slide compendium was developed by the Subcommittee on Antimicrobial Stewardship Programs (ASP) of the Arizona Healthcare-Associated Infection (HAI) Advisory Committee in 2012-2013.

ASP is a multidisciplinary committee representing various healthcare disciplines working to define and provide guidance for establishing and maintaining an antimicrobial stewardship programs within acute care and long-term care institutions and in the community.

Their work was guided by the best available evidence at the time although the subject matter encompassed thousands of references. Accordingly, the Subcommittee selectively used examples from the published literature to provide guidance and evidenced-based criteria regarding antimicrobial stewardship. The slide compendium reflects consensus on criteria which the HAI Advisory Committee deems to represent prudent practice.

Disclaimers

All scientific and technical material included in the slide compendium applied rigorous scientific standards and peer review by the Subcommittee on Antimicrobial Stewardship Programs to ensure the accuracy and reliability of the data. The Subcommittee reviewed hundreds of published studies for the purposes of defining antimicrobial stewardship for Arizonan clinicians. The Arizona Department of Health Services (ADHS) and members of its subcommittees assume no responsibility for the opinions and interpretations of the data from published studies selected for inclusion in the slide compendium.

ADHS routinely seeks the input of highly qualified peer reviewers on the propriety, accuracy, completeness, and quality (including objectivity, utility, and integrity) of its materials. Although the specific application of peer review throughout the scientific process may vary, the overall goal is to obtain an objective evaluation of scientific information from its fellow scientists, consultants, and Committees.

Please credit ADHS for development of its slides and other tools. Please provide a link to the ADHS website when these material are used.

Introduction to Slide Section

- **Preface:**

  One of the most common barriers and challenges is dealing with antimicrobial prescribing in the community. Since a significant amount of bacterial resistance is imported this barrier often feels out of the control of the ASP.

- **Content:**

  6 slides, but note there is more subject matter published in the European literature . Fortunately, this is a rapidly growing topic of discussion and many projects in antimicrobial stewardship in the community setting have been initiated.

- **Suggestions for Presentation:**

  Internists and family medicine prescribers can benefit from introduction to the CDC's Get Smart campaign. These slides could be used with a number of slides in other parts of the slide toolkit.

- **Comments:**

  Several materials are available on the CDC website and these could be copied and distributed as part of an educational plan to optimize antibiotic use in the community, or even at hospital discharge.

ANTIMICROBIAL STEWARDSHIP BARRIERS AND CHALLENGES: ANTIBIOTIC USE IN THE COMMUNITY

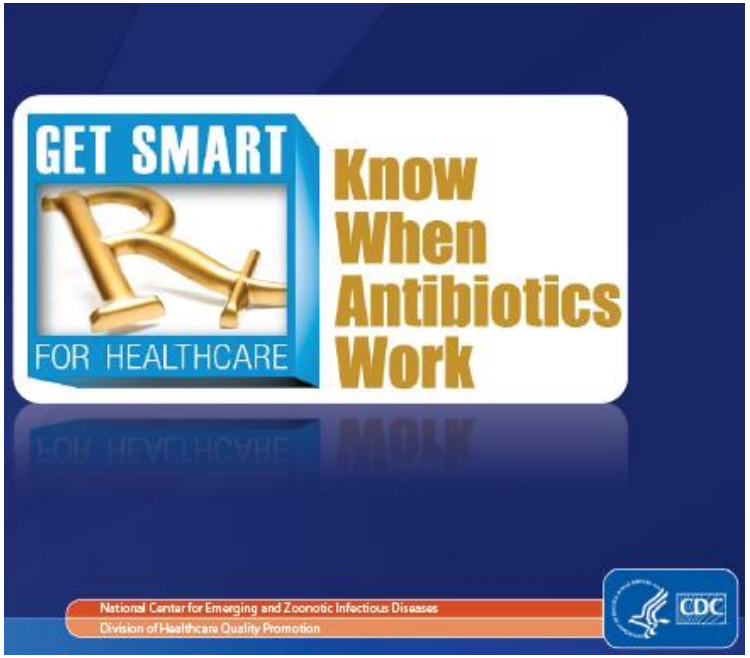
GET SMART: Know When Antibiotics Work

- CDC launched a national campaign for appropriate antibiotic use in the community in 1995, renamed in 2003 as GET SMART: KNOW WHEN ANTIBIOTICS WORK, in conjunction with the launch of a national media campaign
- Campaign aims to reduce the rate of antibiotic resistance by:
  - Promoting adherence to appropriate prescribing guidelines
  - Decreasing demand for antibiotics for viral upper respiratory infections in young children
  - Increasing adherence to prescribed antibiotics for upper respiratory infections
- GET SMART campaign targets the 5 respiratory conditions which encompass the majority of antibiotic over-prescribing: otitis media, sinusitis, pharyngitis, bronchitis, and the common cold
- The target audiences include patients, providers, and parents of young children
- The campaign organized its first annual GET SMART about antibiotics week in 2008

http://www.cdc.gov/getsmart/campaign-materials/about-campaign.html
http://www.cdc.gov/getsmart/campaign-materials/week/promotional-media.html

GET SMART For Healthcare

- Complementary program to community-based GET SMART campaign
- Focused on improving antimicrobial use in inpatient healthcare settings such as acute-care facilities and long-term care through the implementation of antimicrobial (or antibiotic) stewardship programs
- ASPs ensure that hospitalized patients receive the right antibiotic, at the right dose, at the right time, and for the right duration
- Antibiotic overuse contributes to the growing problems of *Clostridium difficile* infection and antibiotic resistance in healthcare facilities
- Goals:
  - Improving antibiotic use through stewardship interventions and programs improves patient outcomes, reduces antimicrobial resistance, and saves money.
  - Interventions to improve antibiotic use can be implemented in any healthcare setting—from the smallest to the largest.
  - Improving antibiotic use is a medication-safety and patient-safety issue.



http://www.cdc.gov/getsmart/healthcare/inpatient-stewardship.html

Outpatient Antimicrobial Stewardship and Primary Care Pediatricians: Effect of Intervention

- Cluster randomized trial of outpatient antimicrobial stewardship (pre-post)
- Study period Oct 2008 – June 2011
- Excluded children with chronic medical conditions, antibiotic allergies, and prior antibiotic use
- 18 pediatric primary care practices (162 clinicians) in PA and NJ
- Intervention included one 1-hour on-site clinician education session (June 2010) followed by 1 year of personalized, quarterly audit and feedback of prescribing for bacterial and viral acute respiratory tract infections or usual practice
- Outcome and measures included rates of broad-spectrum (off-guideline) antibiotic prescribing for 1 year after the intervention (versus control group)

Measure	Relative Decrease Observed Between Groups		P Value
	Intervention Group	Control Group	
Broad-spectrum ABX prescribing	26.8% → 14.3%	28.4% → 22.6%	0.01
Off-guideline prescribing for children with pneumonia	15.7% → 4.2%	17.1% → 16.3%	< 0.001
Off-guideline prescribing for children with acute sinusitis	38.9% → 18.8%	40.0% → 33.9%	0.12

Gerber J et al. JAMA. 2013;309(22):2345-52.

“Commandments” For Appropriate Antibiotic Use in the Outpatient Setting: Sound Familiar?

1. Use antibiotics only when needed; teach the patient how to manage symptoms of non-bacterial infections
2. Select the adequate antibiotic; precise targeting is better than shotgun therapy
3. Consider pharmacokinetics and pharmacodynamics when selecting an antibiotic; use the shortest antibiotic course that has proven clinical efficacy
4. Encourage patient compliance
5. Use antibiotic combinations only in specific situations
6. Follow only evidence-based guidelines; beware those sponsored by drug companies
7. Rely (rationally) upon the clinical microbiology lab
8. Prescribe antibiotics empirically but intelligently; know local susceptibility trends and also surveillance limitations

Adapted from: Levy-Hara G et al. Frontiers in Microbiol. November 2011;2(article 230):1-7.